

DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-001354**Date Inspected:** 10-Jan-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 900**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 2200**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China

CWI Name:	Hue Wei Qing & Wu Meng Kai	CWI Present:	Yes	No
Inspected CWI report:	Yes No N/A	Rod Oven in Use:	Yes	No N/A
Electrode to specification:	Yes No N/A	Weld Procedures Followed:	Yes	No N/A
Qualified Welders:	Yes No N/A	Verified Joint Fit-up:	Yes	No N/A
Approved Drawings:	Yes No N/A	Approved WPS:	Yes	No N/A
		Delayed / Cancelled:	Yes	No N/A
Bridge No:	34-0006	Component:	OBG, 77, 89 & 114 Meter Mock-Up	

Summary of Items Observed:

OBG

This Quality Assurance Inspector observed in bay 7 Zhenhua Port Machinery Company Quality Control Department performing ultrasonic testing in bay 7 on complete joint penetration splice welds in the floor beams. The ultrasonic technicians observed performing the testing were Wu Yong Jun, Xue Hai Yong and E Shua Qin all of whom were observed testing through dirty couplant and using what this Quality Assurance Inspector felt was excessive transducer speed. The Zhenhua Port Machinery Company Translator Xu Jun (Eric) was called over to discuss with the technicians about the quality of the couplant and the speed which they were moving there transducers. Ultrasonic testing was not completed during this shift.

This Quality Assurance Inspector observed in bay 7 Zhenhua Port Machinery Company Welder Yuan Wen Song, welder identification number 055491 welding on floor beam joint FB016-02-003. The essential welding variables were checked and found to be as follows; voltage 30.2, amperage 303, travel speed 448 millimeters per minute and preheat was 39° Celsius. Welder Wang Chang, welder identification number 058102 was observed tack welding the floor beam to flange for weld joint FB007-01-004 and welder Yang Xu He, welder identification number 057795 was observed tack welding the flange to floor beam weld joint EB003-14-005.

This Quality Assurance Inspector checked and took misalignment measurements on the closed u-rib weld trial in bay 1 at the direction of the Structural Materials Representative Mazen Wahbeh using a straight edge, measurements were taken in four locations on the bolted end of each of the 13000 and 1750 millimeter long close u-rib faces. Reading number one was taken at the very end of each closed rib face between the straight edge and

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the rib face approximately 20 to 25 millimeters above the partial joint penetration weld between the rib and deck plate. The second measurement, once again between the straight edge and rib face, was taken on the center line of the first column of bolt holes. The third measurement was taken in line with the second vertical row of bolt holes and the fourth measurement at the third vertical row of bolt holes. Pictures were taken of both the set up and various readings and the pictures and data was emailed to Task Leader Jimmy Cochran of Caltrans. Data as follows: Closed U-rib U001, U002, U003 & U004 welds 1 & 2 reading 1 through 4 were all zeros. U005 weld 1 reading 1 through 4 were all zeros and weld 2 location 1 was 1.9mm, 2 was 1.5mm, 3 was 1mm and 4 was 0.6mm. U006 weld 1, location 1 was 1.6mm, 2 & 3 were 1.8mm and 4 was zero; weld 2 locations 1 & 2 were zero, 3 was 0.5mm and 4 was 1mm. For U007 weld 1, location 1 & 2 were 1.8mm, 3 was 1mm and 4 was zero and for weld 2 locations 1 & 2 were zero, 3 was 0.5mm and 4 was 1mm. U008 weld 1, locations 1 through 3 were zero and 4 was 0.2mm and as for weld 2 location 1 was 0, 2 was 0.5mm, 3 was 1.8mm and 4 was 3mm. For U009 weld 1, location 1 was 1.8mm, 2 was 1.6mm, 3 was 1.5mm and 4 was 1.2mm. For weld 2 locations 1 & 2 were zero, 3 was 0.8mm and 4 was 1.8mm. Closed U-rib U010 weld 1, location 1 was 0.4mm, 2 was 0.3mm, 3 was 0.1mm and 4 was zero and for weld 2 locations 1 & 2 were zero, 3 was 1mm and 4 was 1.5mm.

This Quality Assurance Inspector was requested to perform 10% magnetic particle testing on the fillet welds of three side plates in bay 3. The member numbers were SP034A, SP039A and SP040A however after arriving in bay 3 with the magnetic particle equipment, Mr. Fu Yu Hong the company translator informed me that the Zhenhua Port Machinery Company Quality Control Department had failed to perform there portion of the testing so the members were not ready for quality assurance to perform their testing at this time.

77 Meter Mock-Up

This Quality Assurance Inspector observed Zhenhua Port Machinery Company Welder Liu Shuo Ha, weld identification number 066456 welding joint MUSA-SA104 A/B 69 with the shield metal arc welding process. Some essential welding variables were checked and found as follows; voltage 25.1, amperage 189, preheat temperature 186° Celsius and travel speed 137 millimeters per minute. The Certified Welding Inspector was Xu Le Feng. Welder Wang Bin, welder identification 048696 was observed welding joint MUSA-MA1 D/F 16B with the flux core arc welding process. The essential welding variables were checked and found as follows; voltage 31.6, amperage 298, preheat 170° Celsius and the travel speed was 334 millimeters per minute. Welder Du Heng Hua, weld identification number 037779 was observed welding MUSA-SA95-68 with the shield metal arc welding process. Again the essential welding variables were checked and found as follows; voltage 25.3, amperage 157, preheat 178° Celsius and the travel speed was 135 millimeter per minute.

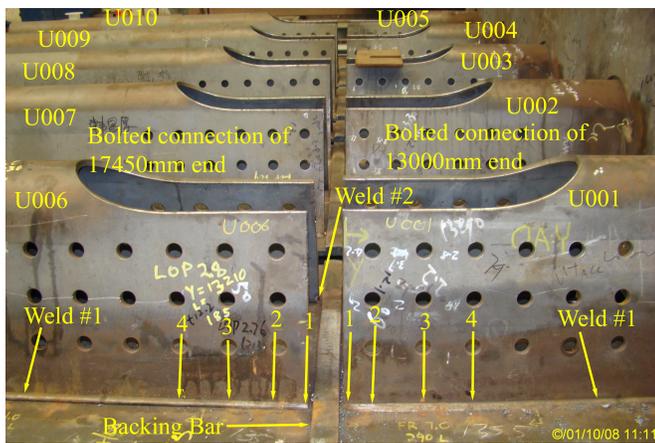
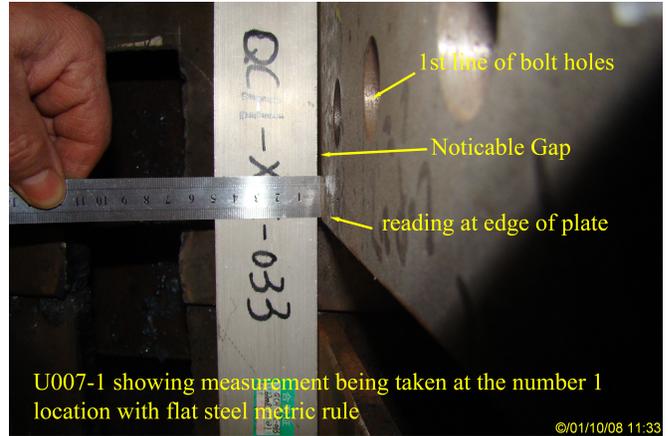
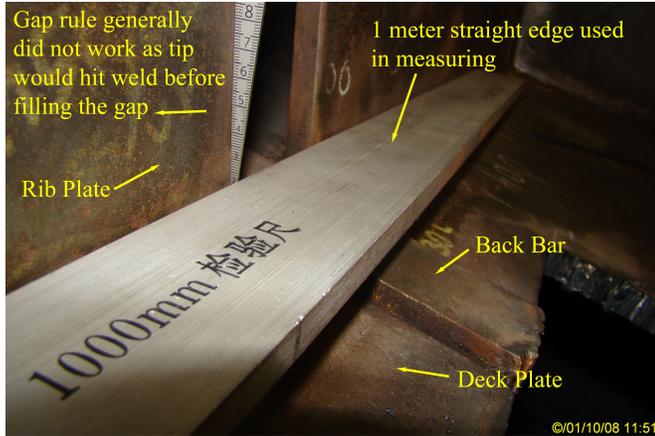
114 Meter Mock-Up

This Quality Assurance Inspector performed 10% ultrasonic verification testing on the Lower Shaft Assembly for two separate welds MUSC-MA107 B/C -2 & 3 between skin plates B & C and C & D. For details see TL-6027 Ultrasonic Testing report dated January 10, 2008.

This Quality Assurance Inspector performed 10% magnetic particle verification testing on the Lower Shaft Assembly weld MUSC-MA107 B/C-3B between skin plates B & C. For details see TL-6028 Magnetic Particle Testing report dated January 10, 2008.

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Summary of Conversations:

See conversations in report above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By: Berger, Bruce

Quality Assurance Inspector

Reviewed By: Cochran, Jim

QA Reviewer